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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,204	10/24/2003	Sukeyuki Shinotsuka	7272-131/ 10312233	2344

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FULBRIGHT AND JAWORSKI LLP
555 S. FLOWER STREET, 41ST FLOOR
LOS ANGELES, CA 90071

EXAMINER

HERNANDEZ, NELSON D

ART UNIT	PAPER NUMBER
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2622

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/693,204	Applicant(s) SHINOTSUKA ET AL.	
	Examiner Nelson D. Hernández Hernández	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 February 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-32 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The Examiner noted the Election of claims. and Applicant's election with traverse of claims 6-14, 21-29, 31 and 32 in the reply filed on February 18, 2010 is acknowledged. The traversal is on the grounds that all the figures pertain to the elected claims. After close examination of the claims in the present Application, the Examiner noted that a plurality of Species is presented in the claims. Therefore, a new requirement for Election of Species is presented in this Office Action replacing the previous requirement for election of Species.

Election/Restrictions

2. This application contains claims directed to the following patentably distinct species

Species 1: Claims 1-5 and 16-20,

Species 2: Claims 6-11 and 21-26,

Species 3: Claims 12, 27 and 29 (it is noted that claim 29 is a multi-dependent claims that depends from claim 27 and claim 28, which belongs to a different Species),

Species 4: Claims 13, 14, 28 and 29 (As discussed above, it is noted that claim 29 is a multi-dependent claims that depends from claim 28 and claim 27, which belongs to Species 3),

Species 5: Claims 15 and 30,

Species 6: Claims 31 and 32.

3. The species are independent or distinct because claims to the different species recite the mutually exclusive characteristics of such species. In addition, these species are not obvious variants of each other based on the current record.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, there are no generic claims.

It is noted that the different Species are directed to different ways to operate a particular transistor to compensate for variations in the pixel output. There is a search and/or examination burden for these patentably distinct species due to their mutually exclusive characteristics. The species require a different field of search (e.g., searching different classes/subclasses or electronic resources, or employing different search queries); and/or the prior art applicable to one species would not likely be applicable to another species; and/or the species are likely to raise different non-prior art issues under 35 U.S.C. 101 and/or 35 U.S.C. 112, first paragraph.

Species 1 is directed to enabling the image sensor to compensate for variations by using a first sensor signal obtainable by setting a gate voltage and a drain voltage of the transistor with shut-off incident light to the photoelectric converting element to normal values when taking video by the image sensor and by using a second sensor signal obtainable by changing the gate voltage and the drain voltage of the transistor to values lower than the normal values when taking video.

Species 2 is different from Species 1 because it is directed to enabling the image sensor to previously set a drain voltage of the transistor of each light sensor circuit to a value at which a sensor signal obtained by conducting the transistor with its gate voltage changed to a value higher than a normal value may correspond to a sensor signal obtainable in a dark state of the light sensor circuit with the normal gate voltage of the transistor when taking video, and thereafter perform compensation for variations in output of each pixel signal by using a sensor signal obtainable from the light sensor circuit by changing the gate voltage of the transistor with the preset drain voltage to a value higher than the normal value for taking video.

Species 3 is different from Species 1 and 2 because it is directed to enabling the image sensor to compensate for variations in levels of respective pixel outputs in a dark state and a bright state by using as a dark-state pixel output a sensor signal obtained from each of the light sensor circuits when conducting the transistor with its gate voltage changed to a value higher than a normal value and its drain voltage equal to a normal value for taking video, and by using as a bright-state pixel signal a sensor signal obtainable by changing the drain voltage of the transistor to a value lower than the normal value for taking video.

Species 4 is different from Species 1-3 because it is directed to enabling the image sensor to previously set a drain voltage of the transistor to a value at which a sensor signal obtained when conducting the transistor by changing its gate voltage to a value higher than a normal value for taking video may correspond to a sensor signal obtainable in a dark state at a normal gate voltage of the transistor and thereafter to

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compensate for variations in dark-state output level of each pixel signal by using as the dark-state pixel signal a sensor signal obtainable by changing the gate voltage of the transistor to a value higher than the normal value as a dark-state pixel signal and for variations in bright-state output level of each pixel signal by using as the bright-state pixel signal a signal obtainable by changing the drain voltage of the transistor to a value lower than the preset value.

Species 5 is different from Species 1-4 because is directed to enabling the image sensor to sample and hold sensor signals read in a time series from respective pixels, obtaining pseudo bright output signals by decreasing by a threshold value the normal drain voltages of the respective transistors corresponding to respective pixels, calculating a difference between each of the obtained pseudo bright output signals and the corresponding sensor signals temporarily stored in the sample-and-hold circuit, and conducting the offset compensation of the previously set bright reference signal by using the determined difference as the offset value.

Species 6 is different from Species 1-5 because is directed to enabling the image sensor to compensate for a variation in each pixel output by using a sensor signal output from the corresponding light sensor circuit by conducting the transistor and changing a drain voltage of the transistor to a higher value or a lower value than the normal value for taking video by the image sensor while maintaining a gate voltage of the transistor at a constant value.

4. **Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species to be examined** even though the requirement may be traversed (37 CFR 1.143) **and (ii) identification of the claims encompassing the elected species**, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

The election of the species may be made with or without traverse. To preserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the election of species requirement, the election shall be treated as an election without traverse. Traversal must be presented at the time of election in order to be considered timely. Failure to timely traverse the requirement will result in the loss of right to petition under 37 CFR 1.144. If claims are added after the election, applicant must indicate which of these claims are readable on the elected species.

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the species unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other species.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nelson D. Hernández Hernández whose telephone number is (571)272-7311. The examiner can normally be reached on 9:00 A.M. to 5:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lin Ye can be reached on (571) 272-7372. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Nelson D. Hernández Hernández/
Examiner, Art Unit 2622
April 28, 2010